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Resistance of Woody Ornamental Plants to Deer Damage

Damage to ornamental plants by whitetailed deer (*Odocoileus virginianus*) has increased during the past decade. This has been associated with:

1. Increasing deer abundance.
2. Human population shifts to rural and suburban homesites.
3. The maturing of abandoned agricultural lands into deer habitat.

In the short run, this situation is largely irreversible. Damage problems, particularly in suburban areas having good quality deer habitat, are likely to intensify in the future. Clearly, elimination of hunting due to firearms restrictions, safety concerns, and changed landowner values will only increase damage in these areas.

Deer Feeding Habits--Deer are selective feeders; they forage on plants or plant parts with considerable discrimination. Their obvious preference for and apparent avoidance of certain plants can be turned to our advantage. Costly browsing damage may be reduced or eliminated by planting less-preferred species or by establishing susceptible plants only in areas protected from deer. Under most circumstances, landscaping based on a knowledge of deer feeding preferences can provide an alternative to the use of expensive chemical repellents and unsightly physical barriers.

Whether or not a particular plant species or variety will be eaten depends on the deer's previous experience, nutritional needs, plant palatability, seasonal factors, weather conditions, and the availability of alternative foods. Deer are creatures of habit, and prior movement patterns or foraging experience can foretell where damage will occur. Deer also are known to feed selectively on fertilized plantings and managed croplands. New plantings added to an existing landscape already severely damaged by deer will likely suffer extreme browsing pressure.

In general the most damage takes place when winter snow cover has reduced food availability. Rather than face starvation, deer will browse even the most resistant plants during periods of food shortage. Under such conditions, other damage control measures should be combined with careful plant selection. Ultimately, a reduction in deer herd size is the most effective solution to the damage problem.

Plant Damage Comparisons--The following tables provide a guide to the relative likelihood of deer damage to many ornamental woody plants used by landscape contractors and property owners. This information can be useful both for selecting plants that are unlikely to be damaged by deer, as well as for identifying those ornamentals that frequently require protection. The four categories identified below are based on the combined experiences and numerical rankings of nursery operators, landscape contractors, Cornell Cooperative Extension personnel, research staff, and other professional horticulturists from the northeastern states. The information was derived from personal communications, published articles, and unpublished reports. The user is cautioned that the deer browsing resistance of any plant species may change due to fluctuations in deer populations, alternative food availability, and environmental factors mentioned previously. No plant species will be avoided by deer under all conditions.

Plants listed in the *No Damage* category are infrequently fed upon by deer and are the best candidates for landscapes prone to deer damage. Deer sometimes feed on ornamentals listed under *Slight Damage*, but damage is usually minor and has limited effect on the shape or attractiveness of the plant. Plants listed under *Moderate Damage* may sometimes be severely damaged by deer. Finally, ornamental plants in the category *Severe Damage* appear to be preferred by deer and usually require physical or chemical protection whenever deer are present. Check before planting any of the species listed below to ensure that they are adapted for your local climate and soil conditions.

No Damage

Barberry
Paper birch
American boxwood
English Boxwood
Russian olive
American holly
Drooping leucothoe
Colorado blue spruce
Japanese pieris
Oregon grape holly
Butterfly bush

Slight Damage

European white birch
American bittersweet
Red osier dogwood
Flowering dogwood
Kousa dogwood
English hawthorn
Redvein enkianthus
European beech
Forsythia
Honey locust
Chinese holly
Inkberry
Chinese junipers (green)
Chinese junipers (blue)
Mountain laurel
Beautybush
Norway spruce
White spruce
Austrian pine
Pitch pine
Mugo pine

Red pine
Scots pine
Japanese flowering cherry
Corkscrew willow
Common sassafras
Common lilac
Japanese wisteria

Moderate Damage

White fir
Red maple
Common horsechestnut
Trumpet creeper
Panicked dogwood
Cotoneaster
Rockspray cotoneaster
Border forsythia
Rose of Sharon
Climbing hydrangea
Japanese holly
Eastern red cedar
Goldflame honeysuckle
Saucer magnolia
Virginia creeper
Eastern white pine
Sweet cherry
Firethorn
Common pear
Chestnut oak
Deciduous azaleas
Rosebar rhododendron
Multiflora rose
Willows
Bridalwreath spiraea
Japanese tree lilac

Greenspire littleleaf
Basswood
Carolina hemlock
Leatherleaf viburnum
Koreanspice virburnum
Paperbark maple
Silver maple
Downy serviceberry
Japanese flowering quince
Smokebush
Cranberry cotoneaster
Japanese cedar
Common witchhazel
Smooth hydrangea
Panicle hydrangea
China girl/boy holly
European larch
Privet
Dawn redwood
Sweet mock orange
Bush cinquefoil
Douglas fir
Bradford callery pear
White oak
Northern red oak
Carolina rhododendron
Staghorn sumac
Rugosa rose
Anthony waterer spiraea
Persian lilac
Late lilac
Linden
Eastern hemlock
Judd viburnum
Doublefile viburnum

Oldfashion weigela

Severe Damage

Balsam fir
Norway maple
Atlantic white cedar
Cornelian dogwood
Wintercreeper
Apples
Plums
Evergreen azaleas
Pinxterbloom azalea
European mountain ash
Yews
Fraser fir
Eastern redbud
Clematis
Winged euonymus
English ivy
Cherries
Rhododendrons
Catawba rhododendron
Hybrid tea rose
English/Japanese hybrid yew
English yew
Japanese yew
Western yew
American arborvita
Aucuba
Big leaf hydrangea